

A NEW WHITE-AND-BLACK SUBSPECIES OF *PROTESILAUS EURYLEON* (PAPILIONIDAE)

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ABSTRACT. *Protesilaus euryleon pleiades* (tribe Leptocircini) is described from the southern Cauca Valley of Colombia. The uniqueness of its completely white-and-black wing pattern is discussed in relation to other recently described taxa of *Protesilaus* and *Heracles* (Papilionidae, tribe Papilionini) which apparently mimic white-and-black papilionids of the tribe Troidini.

Additional key words: *Protesilaus euryleon pleiades*, taxonomy, Colombia.

Attention has been drawn to neotropical papilionids of the tribes Papilionini and Leptocircini (*sensu* Hancock 1983) which display wing patterns primarily white over darker ground color (Johnson et al. 1986a, 1986b). Such phenotypes, distinctive among taxa usually showing red or orange-red hindwing markings, are generally attributed to mimicry of white-and-black colored taxa of the papilionid tribe Troidini (Johnson et al. 1986a, 1986b, Young 1971, K. S. Brown, pers. comm.). Our examination of examples of these white and dark mimetic morphs has led to increased recognition of their occurrence. *Heracles matusiki* Johnson & Rozycki (1986) was described from NE Venezuela, and represents a distinctive cream-white-and-black taxon in the *anchisiades* species group (*sensu* Munroe 1961, Hancock 1983) (tribe Papilionini). *Protesilaus illuminatus* (Niepelt) (tribe Leptocircini), formerly known from one extant male syntype and an accompanying female (and not mentioned in the literature since its 1928 description) was collected again in 1981 and studied by us (Johnson et al. 1986b). This taxon, which we accorded species status because of its cream-white-and-black wing markings and distinctive genitalia, requires biological study to ascertain its relation to red-and-black morphs of the remaining species of the group. *P. illuminatus* might represent a biological subspecies of either *P. euryleon* (Hewitson) or *P. ariarathes* (Esper). In the *P. euryleon*-related species cluster of *Protesilaus* (which includes *P. illuminatus*, *P. euryleon*, *P. phaon* (Boisduval), *P. pausanias* (Hewitson), and *P. protodamas* (Godart) [Johnson et al. 1986a, 1986b, K. S. Brown, pers. comm.]) only the *P. phaon* male form *ulopos* (Gray) has been

recognized as a primarily white-and-black mimetic morph (D'Abre-ra 1981). In remaining *Protesilaus*, *P. harmodius xenoides* female form *virginia* (Rothschild & Jordan) is an example (D'Abrera 1981), and possibly also the type and only specimen of *P. hipparchus* (Staudinger). We have shown that the latter taxon represents a morph of *P. phaon* (Johnson & Matusik 1987).

During our study of the above papilionid groups, we obtained from the Calima River region of the southern Cauca Valley of Colombia fresh specimens of a completely white-and-black morph of *P. euryleon* (Fig. 1). The specimens are genitally indistinguishable from *P. euryleon* (Fig. 2), but their wing patterns of pristine white on velvetine black differ from all known *P. euryleon* populations.

P. euryleon is exceedingly polymorphic (D'Abrera 1981:62–63, Rothschild & Jordan 1906:663–666). However, all previously known populations of the species show red coloration of the hindwing orbs, and most have prominent white to yellowish (or occasionally greenish) patches located medially on both surfaces of the forewing.

The value of the subspecies concept has been a source of controversy among lepidopterists, particularly regarding nearctic taxa (Murphy & Ehrlich 1984). In the neotropics, however, where mimicry phenomena abound (Sheppard et al. 1985), the concept has particular heuristic value and utility. Therefore, we apply the subspecies category to the recently discovered white-and-black southern Cauca Valley population of *P. euryleon*.

***Protesilaus euryleon pleiades*, new subspecies**

(Figs. 1A, B, 2A)

Diagnosis. Distinguishable from all congeneric species-level taxa except *P. illuminatus* by the completely white-and-black wing markings except for minor reddish colorations as noted below. *P. illuminatus* has triangular-shaped white hindwing markings, not orb-shaped as in *P. euryleon*. *P. e. pleiades* has submarginal white coloration typical of the species, and lacks the prominent dorsal red anal marking of *P. illuminatus*. *P. e. pleiades* is distinct from other infraspecific white-and-black morphs of *Protesilaus* as follows: *P. h. xenoides* female form *virginia* (as characteristic of *harmodius*) has a complete medial line of small round spots on the hindwing upper- and under-surfaces (but white in form *virginia*); *P. phaon* male form *ulopos* (as characteristic of *phaon*) lacks the whitish medial patch on both forewing surfaces.

Description. Male. Upper-surfaces of wings: Ground color velvetine black. Forewing with bright white medial patch; hindwing with bright white orbs in vein interspaces from anal margin to caudad of vein M2; light white along margin at vein interspaces, more emphatic costad and bordered basad by extremely narrow red slashes in limbal area. Under-surface of wings: Ground color velvetine black. Forewing with area of mimetic patch powdered blackish over vague white; hindwing with markings as on upper-surface but slightly duller; however, red slashes are more emphatic basad of marginal spots and distinct at anal margin. Length of forewing: 41.0 mm (holotype); 40.5 mm (paratype). Female unknown. Male genitalia (Fig. 2A): Typical of *P. euryleon* as described by Johnson

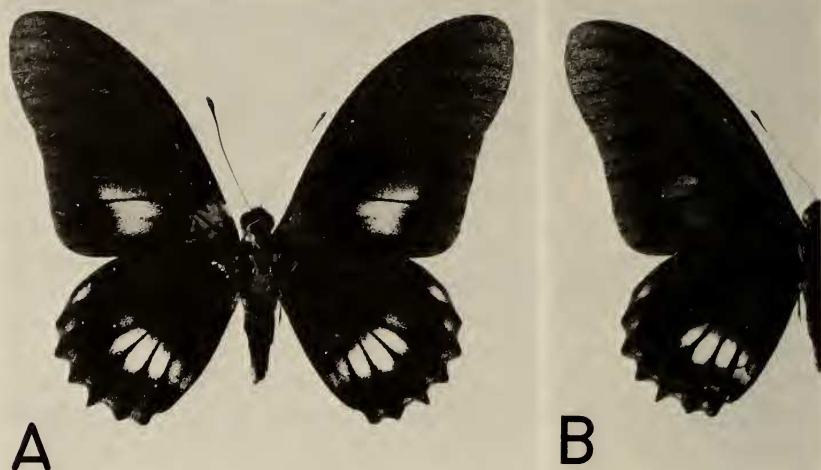


FIG. 1. Holotype male of *P. e. pleiades*. A. Upper-surface; B. Under-surface.

and Rozycki (1986) and Johnson et al. (1986b), differing only in more sharply pointed keel of valval harpe, and slightly larger ventral process (Fig. 2).

Types. Holotype male, on hillside above Calima River, 1,500 m altitude, 50 km SW of Buga, Cauca Valley, Colombia, 15 June 1983, leg. Phillip Mays, in American Museum of Natural History (AMNH); paratype male, same data, leg. local collector with P. Mays, in collection of Phillip Mays (Tarzana, California); paratype male, Rio Bravo, Calima River Valley [in Cauca Valley], June 1985, leg. Charles Condor, in collection of Rick Rozycki (Chicago, Illinois).

Distribution. Presently known only from the type locality, but possibly of wider distribution.

Remarks. Because we received the primary type and first-listed paratype specimens second-hand through an anonymous commercial dealer (who mentioned three other male specimens and provided conflicting collection data on different occasions) there was initial confusion about the precise location of the *P. e. pleiades* population. Earlier, K. S. Brown Jr. informed us he had heard reports of the population but did not know its whereabouts or the whereabouts of any specimens. Details were provided when we learned from Mays that he had personally participated in collecting the eventual primary type and one paratype. We assume the three other reported males (currently in the hands of the above-mentioned anonymous dealer) come from the same general area because Mays visited the type locality after being told that three other specimens had been collected there. Mays received this information from Christopher Farrell, a dealer who formerly resided in Colombia. Farrell reportedly remembered the general collecting data on the three specimens, though he did not keep them. The Cauca Valley data is further supported by the recent collection of the second-listed paratype. Considering the above, earlier data given us (and perhaps others) by the commercial source, citing the vicinity of Leticia, Amazonas State, Colombia, for *P. e. pleiades* specimens is probably inaccurate. Since these data derived from verbal communication, with label data available only in the case of the Mays paratype, we think the Leticia data were a miscommunication. *P. illuminatus* occurs N of Leticia in the upper Rio Putumayo Valley, and had also been obtained by us through the same commercial source; this may have caused the confusion. This background deserves mention because a white-and-black form of *P. euryleon* could foreseeably occur in the upper Rio Putumayo region, at the edge of its generally montane range.

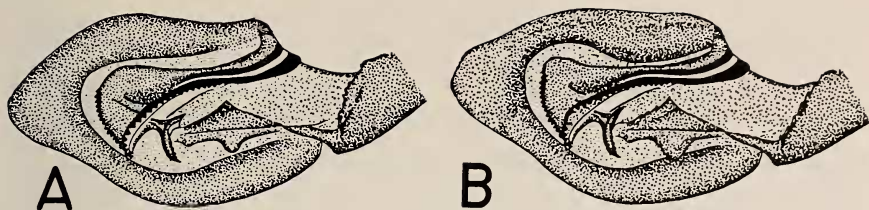


FIG. 2. Male genitalia of (A) *P. e. euryleon*, Costa Rica, AMNH, after Johnson et al. (1986a, 1986b) and (B) *P. e. pleiades* holotype. Each shows inner-lateral view of right valve.

Another papilionid known only from this region, *P. dospassosi* (Rütimeyer), also is distinctive in its reduction of upper surface red coloration (Johnson et al. 1986a).

Etymology. Following on the Greek binomial and referring to the bright white-on-black markings, *pleiades* (from the constellation of that name) denotes the seven-spotted pattern of the wing surfaces.

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